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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,703	11/26/2001	Claes Ohngren	024444-990	3922

7590 04/21/2004  
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EXAMINER

KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/991,703	OHNGREN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin P. Kerns	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-9 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/30/02</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicants' election of Group I (claims 1-7) in the paper received on April 5, 2004 is acknowledged. Because applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

***Priority***

2. Acknowledgment is made of applicants' claim for foreign priority based on an application filed in Sweden on November 24, 2000. It is noted, however, that applicants have not filed a certified copy of the Swedish application as required by 35 U.S.C. 119(b).

***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claim 3 limitation relating to the plurality of valleys/recesses and peaks that "extend helically" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "15" (Figure 1). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. It is suggested to insert "15" after "direction" on page 4, line 11 of the specification, to overcome this objection.

5. The drawings are objected to because the word "Tid" should be changed to "Time" on the x-axis of Figure 3. Also, "fraktion" should be changed to "fraction" in all four graphs in Figure 5. The legends "Prof. 10" and "Prof. 50" in Figures 4 and 5 should also be changed accordingly, as it is unclear as to what word the term "Prof." is an abbreviation for. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In this instance, "The invention provides a" should be replaced by "A".

7. The disclosure is objected to because of the following informalities: on page 1, line 29, "disadvan-tages" should be changed to "disadvantages". Other inappropriately hyphenated terms to be corrected are also present throughout the specification. On page 4, line 19, "," should be added after "mandrel". On pages 6 and 7, the terms "Prof. 10" and "Prof. 50" should be changed accordingly, as it is unclear as to what word the term "Prof." is an abbreviation for (also see above drawing objections section). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, it is unclear as to what specific structure of the metal tube has "a smoothly curved bottom". Would it be the bottom of the valleys/recesses within

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the tube? If so, it is suggested that the term "bottom" be replaced with "edges" (or an equivalent), as from Figure 2 it appears that all "edges" are smoothly curved.

With regard to claim 1, the elemental composition is unclear as claimed without the limitation "balance iron". This limitation should be added to complete the listing of elemental components.

Claim 3 recites the limitation "the plurality of peaks". There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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12. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over England et al. (US 5,016,460) in view of Darnfors (US 5,126,107).

England et al. disclose a finned metal tube that contains at least 30% nickel and 10% chromium, such that the finned metal tube body 24 (Figure 5) includes a plurality of smoothly curved valleys/recesses 28 and a plurality of smoothly curved peaks (fins 26) extending longitudinally along the length of the inner profile region of the tube, with the outer surface of the tube also being smoothly curved (abstract; column 1, lines 53-68; column 2, lines 20-68; column 3, lines 1, 34-39, 62-68, and Tables; column 4, lines 1-13, 34-39, and 61; column 5, lines 12-29; and Figures 1, 2, and 5). The longitudinal internal fins 26 are selectively either straight or twisted, and the twisted (helical) fins are used in furnace applications where heat transfer needs to be increased (column 4, lines 62-68; and column 5, lines 1-9). England et al. do not disclose the specific elemental compositions of the metal alloy tube.

However, Darnfors discloses an iron/nickel/chromium alloy for use in high temperature applications, in which the alloy includes 0.01-0.08% C, 1.2-2.0% Si, trace to 2% Mn, 22-29% Cr, 32-38% Ni, 0.01-0.15% rare earth metals, 0.08-0.25% N, normal impurities (including unavoidable oxides of the above metals, including Cr, on the inner surface of the metal tube), and balance iron (also covering claims 5-7), with this composition being applicable to tubes in furnaces, combustion chambers, and fluidized beds, such that this composition is advantageous for improved resistance at high temperatures against carburizing and oxidizing, while providing good creep fracture resistance and resistance to attack from gaseous halides and metal oxides (abstract;

column 1, lines 5-11 and 60-68; column 2, lines 1-68; column 3, lines 1-38 and 59-68; column 4, lines 1-11; and Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the finned metal tube disclosed by England et al., by using the specified elemental composition of the metal alloy for tubes in high temperature applications, as taught by Darnfors, in order to improve resistance at high temperatures against carburizing and oxidizing, while providing good creep fracture resistance and resistance to attack from gaseous halides and metal oxides (Darnfors; abstract; column 1, lines 5-11 and 60-68; and column 2, lines 1-9).

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Bibighaus, Suwa et al., Kasprzyk, Sievert, Jones et al., Demarest et al., and Di Nicolantonio et al. references are also cited as related art.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns* 4/15/04  
Examiner  
Art Unit 1725

KPK  
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April 15, 2004